Please provide the following information, and submit to the NOAA DM Plan Repository.

Reference to Master DM Plan (if applicable)

As stated in Section IV, Requirement 1.3, DM Plans may be hierarchical. If this DM Plan inherits provisions from a higher-level DM Plan already submitted to the Repository, then this more-specific Plan only needs to provide information that differs from what was provided in the Master DM Plan.

URL of higher-level DM Plan (if any) as submitted to DM Plan Repository:

1. General Description of Data to be Managed

1.1. Name of the Data, data collection Project, or data-producing Program:
2013 USGS Lidar: NY post-Sandy, Ulster, Dutchess, Orange Counties

1.2. Summary description of the data:
The Atlantic Group (TAG) collected 2846 square miles in the New York counties of Ulster, Dutchess, and Orange. The nominal pulse spacing for this project was no greater than 0. 7 meters. Dewberry used proprietary procedures to classify the LAS into an initial ground surface. Dewberry then used proprietary procedures to classify the LAS and performed manual classifications according to project specifications: 1-Unclassified, 2-Ground, 7-Noise, 9-Water, and 10-Ignored Ground due to breakline proximity. The data was formatted according to the USNG Tile naming convention with each tile covering an area of 1,500 meters by 1,500 meters. A total of 3465 tiles were produced for the entire project encompassing an area of approximately 2846 sq. mile.

1.3. Is this a one-time data collection, or an ongoing series of measurements?
One-time data collection

1.4. Actual or planned temporal coverage of the data:
2013-11-20 to 2014-06-01

1.5. Actual or planned geographic coverage of the data:
W: -74.78481, E: -73.483185, N: 42.182013, S: 41.135893

1.6. Type(s) of data:
(e.g., digital numeric data, imagery, photographs, video, audio, database, tabular data, etc.)
Elevation Data

1.7. Data collection method(s):
(e.g., satellite, airplane, unmanned aerial system, radar, weather station, moored buoy, research vessel, autonomous underwater vehicle, animal tagging, manual surveys, enforcement activities, numerical model, etc.)

1.8. If data are from a NOAA Observing System of Record, indicate name of system:

1.8.1. If data are from another observing system, please specify:

2. Point of Contact for this Data Management Plan (author or maintainer)

2.1. Name:
NOAA Office for Coastal Management (NOAA/OCM)

2.2. Title:
Metadata Contact

2.3. Affiliation or facility:
NOAA Office for Coastal Management (NOAA/OCM)

2.4. E-mail address:
coastal.info@noaa.gov

2.5. Phone number:
(843) 740-1202

3. Responsible Party for Data Management
Program Managers, or their designee, shall be responsible for assuring the proper management of the data produced by their Program. Please indicate the responsible party below.

3.1. Name:

3.2. Title:
Data Steward

4. Resources
Programs must identify resources within their own budget for managing the data they produce.

4.1. Have resources for management of these data been identified?

4.2. Approximate percentage of the budget for these data devoted to data management (specify percentage or "unknown"):

5. Data Lineage and Quality
NOAA has issued Information Quality Guidelines for ensuring and maximizing the quality, objectivity, utility, and integrity of information which it disseminates.

5.1. Processing workflow of the data from collection or acquisition to making it publicly accessible
(describe or provide URL of description):
Process Steps:

- Data for the Ulster, Dutchess, and Orange Counties NY LiDAR project was acquired by The Atlantic Group (TAG) using a Partenavia S.P.A. P 68 C/TC (N775MW) and a Cessna T210L (N732JE). The project area included approximately 2846 square miles in the New York counties of Ulster, Dutchess, and Orange. LiDAR sensor data was collected with the Leica ALS70-HP LiDAR system. No imagery was requested or delivered. The data was delivered in the UTM coordinate system, meters, zone 18, horizontal datum NAD83 (2011), vertical datum NAVD88, Geoid 12A. Deliverables for the project included a raw (unclassified) calibrated LiDAR point cloud, survey control, and a final control report. A preliminary RMSEz error check is performed at this stage of the project life cycle in the raw LiDAR dataset against GPS static and kinematic data and compared to RMSEz project specifications. The LiDAR data is examined in open, flat areas away from breaks. Lidar ground points for each flightline generated by an automatic classification routine are used. Overall the LiDAR data products collected by Atlantic meet or exceed the requirements set out in the Statement of Work. The quality control requirements of Atlantic's quality management program were adhered to throughout the acquisition stage fo this project to ensure product quality. LIDAR acquisition began on November 20, 2013 (julian day 324) and was completed on June 01, 2014 (julian day 152). A total of 22 survey missions were flown to complete the project. TAG utilized a Leica ALS70-HP LiDAR system for the acquisition. The flight plan was flown as planned with no modifications. There were no unusual occurrences during the acquisition and the sensor performed within specifications. There were 499 flight lines required to complete the project. The initial step of calibration is to verify availability and status of all needed GPS and Laser data against field notes and compile any data if not complete. Subsequently the mission points are output using Leica's ALS Post Processor, initially with the most recent boresight values. The initial point generation for each mission calibration is verified within Microstation/Terrascan for calibration errors. If a calibration error greater than specification is observed within the mission, the roll pitch and scanner scale corrections that need to be applied are calculated. The missions with the new calibration values are regenerated and validated internally once again to ensure quality. All missions are validated against the adjoining missions for relative vertical biases and collected GPS validation points for absolute vertical accuracy purposes. On a project level, a supplementary coverage check is carried out to ensure no data voids unreported by Field Operations are present. The initial points for each mission calibration are inspected for flight line errors, flight line overlap, slivers or gaps in the data, point data minimums, or issues with the LiDAR unit or GPS. Roll, pitch and scanner scale are optimized during the calibration process until the relative accuracy is met. Relative accuracy and internal quality are checked using at least 3 regularly spaced QC blocks in which points from all lines are loaded and inspected. Vertical differences between ground surfaces of each line are displayed. Color scale is adjusted so that errors greater than the specifications are flagged. Cross sections are visually inspected across each block to validate point to point, flightline to flightline and mission to mission agreement. For this project the specifications used are as

follow: Relative accuracy <= 7cm RMSEZ within individual swaths and <=10 cm RMSEZ or within swath overlap (between adjacent swaths). UTM coordinate system, meters, zone 18, horizontal datum NAD83 (2011), vertical datum NAVD88, Geoid 12A

- 2014-08-01 00:00:00 - Dewberry utilizes a variety of software suites for inventory management, classification, and data processing. All LiDAR related processes begin by importing the data into the GeoCue task management software. The swath data is tiled according to project specifications (1,500 m x 1,500 m). The tiled data is then opened in Terrascan where Dewberry uses proprietary ground classification routines to remove any non-ground points and generate an accurate ground surface. The ground routine consists of three main parameters (building size, iteration angle, and iteration distance); by adjusting these parameters and running several iterations of this routine an initial ground surface is developed. The building size parameter sets a roaming window size. Each tile is loaded with neighboring points from adjacent tiles and the routine classifies the data section by section based on this roaming window size. The second most important parameter is the maximum terrain angle, which sets the highest allowed terrain angle within the model. Once the ground routine has been completed a manual quality control routine is done using hillshades, cross-sections, and profiles within the Terrasolid software suite. After this QC step, a peer review and supervisor manual inspection is completed on a percentage of the classified tiles based on the project size and variability of the terrain. After the ground classification corrections were completed, the dataset was processed through a water classification routine that utilizes breaklines compiled by Dewberry to automatically classify hydrographic features. The water classification routine selects ground points within the breakline polygons and automatically classifies them as class 9, water. During this water classification routine, points that are within 0.3 meter of the hydrographic features are moved to class 10, an ignored ground due to breakline proximity. In addition to classes 1, 2, 9, and 10, there is a Class 7, noise points . Class 7 was only used if needed when points could manually be identified as low/high points. The fully classified dataset is then processed through Dewberry's comprehensive quality control program. The data was classified as follows: Class 1 = Unclassified. This class includes vegetation, buildings, noise etc. Class 2 = Ground Class 7= Noise Class 9 = Water Class 10=Ignored The LAS header information was verified to contain the following: Class (Integer) GPS Week Time (0.0001 seconds) Easting (0. 003 m) Northing (0.003 m) Elevation (0.003 m) Echo Number (Integer 1 to 4) Echo (Integer 1 to 4) Intensity (16 bit integer) Flight Line (Integer) Scan Angle (Integer degree)
- 2015-01-01 00:00:00 - All hydrographic breaklines were collected by Tuck Mapping Solutions using LP360. LP360 allows the user to view both the intensity and elevation of the dataset when placing the breaklines. The breaklines are then conflated in LP360 to match the lidar elevations. Monotonicity is enforced on linear hydrographic features during the conflate process and water bodies are assigned the lowest elevation during the conflate process so that each water body is set to

one constant elevation that is below the surrounding terrain. The breaklines were collected in accordance with the Data Dictionary. Inland Lakes and Ponds and Inland Streams and Rivers were collected according to specifications for the Ulster, Dutchess, and Orange Counties NY LiDAR Project.
- 2018-11-13 00:00:00 - NOAA OCM obtained the data from the USGS rocky ftp site. Data were converted to geographic coordinates and ellipsoid heights for ingest into the Digital Coast Data Access Viewer. NGS Geoid12a was used for the conversion to ellipsoid height. (Citation: Classified lidar data)
- 2020-02-20 00:00:00 - Pollpel Island in the Hudson River was found unclassified. Global Mapper was used to classify ground on the island. The continually updated shoreline product was used to then classify the water that had been classified as ground.

5.1.1. If data at different stages of the workflow, or products derived from these data, are subject to a separate data management plan, provide reference to other plan:

5.2. Quality control procedures employed (describe or provide URL of description):

6. Data Documentation

The EDMC Data Documentation Procedural Directive requires that NOAA data be well documented, specifies the use of ISO 19115 and related standards for documentation of new data, and provides links to resources and tools for metadata creation and validation.

6.1. Does metadata comply with EDMC Data Documentation directive?

No

6.1.1. If metadata are non-existent or non-compliant, please explain:

Missing/invalid information:
- 1.7. Data collection method(s)
- 3.1. Responsible Party for Data Management
- 4.1. Have resources for management of these data been identified?
- 4.2. Approximate percentage of the budget for these data devoted to data management
- 5.2. Quality control procedures employed
- 7.1. Do these data comply with the Data Access directive?
- 7.1.1. If data are not available or has limitations, has a Waiver been filed?
- 7.1.2. If there are limitations to data access, describe how data are protected
- 7.4. Approximate delay between data collection and dissemination
- 8.1. Actual or planned long-term data archive location
- 8.3. Approximate delay between data collection and submission to an archive facility
- 8.4. How will the data be protected from accidental or malicious modification or deletion prior to receipt by the archive?

6.2. Name of organization or facility providing metadata hosting:
NMFS Office of Science and Technology

6.2.1. If service is needed for metadata hosting, please indicate:

6.3. URL of metadata folder or data catalog, if known:
https://www.fisheries.noaa.gov/inport/item/54790

6.4. Process for producing and maintaining metadata
(describe or provide URL of description):
Metadata produced and maintained in accordance with the NOAA Data Documentation Procedural Directive: https://nosc.noaa.gov/EDMC/DAARWG/docs/EDMC_PD-Data_Documentation_v1.pdf

7. Data Access
NAO 212-15 states that access to environmental data may only be restricted when distribution is explicitly limited by law, regulation, policy (such as those applicable to personally identifiable information or protected critical infrastructure information or proprietary trade information) or by security requirements. The EDMC Data Access Procedural Directive contains specific guidance, recommends the use of open-standard, interoperable, non-proprietary web services, provides information about resources and tools to enable data access, and includes a Waiver to be submitted to justify any approach other than full, unrestricted public access.

7.1. Do these data comply with the Data Access directive?

7.1.1. If the data are not to be made available to the public at all, or with limitations, has a Waiver (Appendix A of Data Access directive) been filed?

7.1.2. If there are limitations to public data access, describe how data are protected from unauthorized access or disclosure:

7.2. Name of organization of facility providing data access:
NOAA Office for Coastal Management (NOAA/OCM)

7.2.1. If data hosting service is needed, please indicate:

7.2.2. URL of data access service, if known:
https://coast.noaa.gov/dataviewer/#/lidar/search/where:ID=8628
https://coast.noaa.gov/htdata/lidar2_z/geoid18/data/8628

7.3. Data access methods or services offered:
Data is available online for custom downloads

7.4. Approximate delay between data collection and dissemination:

7.4.1. If delay is longer than latency of automated processing, indicate under what authority data access is delayed:

8. Data Preservation and Protection

The NOAA Procedure for Scientific Records Appraisal and Archive Approval describes how to identify, appraise and decide what scientific records are to be preserved in a NOAA archive.

8.1. Actual or planned long-term data archive location:
(Specify NCEI-MD, NCEI-CO, NCEI-NC, NCEI-MS, World Data Center (WDC) facility, Other, To Be Determined, Unable to Archive, or No Archiving Intended)

8.1.1. If World Data Center or Other, specify:

8.1.2. If To Be Determined, Unable to Archive or No Archiving Intended, explain:

8.2. Data storage facility prior to being sent to an archive facility (if any):
Office for Coastal Management - Charleston, SC

8.3. Approximate delay between data collection and submission to an archive facility:

8.4. How will the data be protected from accidental or malicious modification or deletion prior to receipt by the archive?
Discuss data back-up, disaster recovery/contingency planning, and off-site data storage relevant to the data collection

9. Additional Line Office or Staff Office Questions

Line and Staff Offices may extend this template by inserting additional questions in this section.